Rinsing water from battery cell production

automotive

Case**Study**

cleaning systems for liquids

“Stable rinse water quality in battery cell production – reducing costs, securing processes”

The quality of cleaning processes plays a crucial role in the manufacture of battery cells. At a leading car manufacturer, high levels of chemical carryover led to inadequate rinse water values, frequent water changes and high disposal costs. A sustainable and economical solution was needed to stabilise rinse water quality and reduce operating costs.

Initial situation

In the cleaning plant for battery cells, consistent rinse water quality could not be guaranteed due to high chemical carryover. The geometry of the components led to a considerable amount of contaminants being carried over into the subsequent rinse baths.

This resulted in frequent water changes, high disposal costs and production downtimes due to necessary maintenance measures.

Project at a Glance

Project:
Efficient treatment of rinse baths to reduce disposal costs and ensure process quality

System Technology:
- Bag filter with pump
- Evaporator ET 100
- Coalescence separator TB 250
- IBC filling station

Customer:
Leading car manufacturer

Contractor:
MKR Metzger GmbH
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Requirements

- Ensuring consistent flushing water quality with a conductivity of less than 30 µS/cm
- Reducing disposal volumes through recirculation
- Minimising production interruptions and operating costs

MKR Solution

An ET 100 atmospheric evaporator was integrated into the process for continuous treatment of the rinse water. The wastewater from the first rinse stage is taken directly from the tank and passed through a bag filter before being treated in the evaporator. This is followed by post-treatment in a TB 250 coalescence separator to efficiently remove any remaining contaminants. The purified distillate is returned to the second rinsing stage, enabling cascaded use of the rinsing baths.

Results

- Optimisation of flushing water quality:
  - Ensuring conductivity of less than 30 µS/cm without additional chemical post-treatment

- Reduction of disposal costs:
  - Significant reduction in wastewater volumes through recirculation

- Increase the operational efficiency:
  - Reduction in downtime and maintenance costs for the cleaning system